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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,040	04/19/2004	Jay D. White	HEND-BC-REG-CIP (45007-28)	2384
24120	7590	10/17/2006	EXAMINER BELLINGER, JASON R	
DAVID P DURESKA BUCKINGHAM DOOLITTLE & BURROUGHS, LLP 4518 FULTON DRIVE, NW P O BOX 35548 CANTON, OH 44735-5548			ART UNIT 3617	PAPER NUMBER

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/827,040	Applicant(s) WHITE ET AL.	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27, 33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 is indefinite due to the fact that it is unclear from what element(s) of the invention the control unit accepts direct input about the target air pressure.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3, 5, 7, 12-13, 15, 17, 22-23, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Le Chatelier et al. Le Chatelier et al shows a tire inflation system including an air supply source 134 in selective communication with a tire 123. A pneumatic conduit extends between the air supply source 134 and the tire 123. A first valve 131 is in fluid communication with the pneumatic conduit, and includes open and closed positions. Air passes from the air supply source 134 through a first portion 133 of the conduit to the first valve 131. When the first valve 131 is open, the air then passes through the first valve 131 to a second portion 129 of the conduit.

A second valve 128 is disposed between the second portion 129 of the conduit and a third portion 126 of the conduit, and includes both open and closed positions and first and second channels. In the open position, the first channel aligns with the second 129 and third 126 portions of the conduit, allowing air to pass therethrough. When in the closed position, the second channel of the second valve 128 aligns with the third portion 126 of the conduit, and air vents to the atmosphere from the third portion 126 of the conduit (namely through the second valve's 128 connection with exhaust valve 137).

A rotary union 125 is in fluid communication with the third portion 126 of the conduit adjacent the tire 123. A first pressure indicator 135 is in fluid communication with the first portion 133 of the conduit to indicate the air pressure therein. A second pressure indicator 127 is in fluid communication with the third portion 126 of the conduit to indicate the air pressure therein. A control unit 140 is operatively connected to the first 131 and second 128 valves, and the first 135 and second 127 pressure indicators. The control unit 140 accepts direct input of a target air pressure setting for the tire 123. A vent tube 138 is fluidly connected to the second channel of the second valve 128, and further includes a porting structure 137.

As set forth in column 8, line 36 through column 9, line 31, the tire inflation system of Le Chatelier et al includes the steps of: determining the inflation pressure with a step-up procedure, whereby small bursts of air from the air supply move into a portion of the conduit between the air supply and the tire retention valve; inflating the tire with an extended-pulse procedure; and performing a shut-down sequence once a predetermined inflation pressure is reached. The proper functioning of the pressure

Art Unit: 3617

retention valve, and the testing of the integrity of a portion of the conduit would also be performed.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Le Chatelier et al contains all of the limitations as set forth in paragraph 4 above, but does not specify that the control unit includes a warning light system. However, it is well known in the art that tire inflation systems including a control unit for monitoring air pressure in tires may include warning systems for indicating when air pressure is lost, etc., in order to allow the vehicle operator to know when there is a problem with the air pressure in the tires during operation. These warning systems may include one or more lights that illuminate to indicate the problems occurring.

Le Chatelier et al does not specify that the volume of the air burst(s) is related to the volume of a section of the conduit, nor the procedure of how the air burst volume is calculated. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that the volume of the air burst would be related to the volume of a section of the conduit in order to prevent the conduit from rupturing due to an air burst having a volume greater than the conduit can manage. Furthermore, it would be obvious to one of ordinary skill in the art at the time of the invention to calculate the

Art Unit: 3617

volume of the air burst by determining the pressure capacity of the conduit first and comparing that value to the desired pressure of the system (i.e. the tire).

While Le Chatelier et al does not specify how the proper functioning of the pressure retention valve and/or pneumatic conduit would be achieved, it would have been obvious to one of ordinary skill in the art at the time of the invention to compare multiple readings of the pressure in a sealed portion of the conduit between the retention valve and the first valve, and either reseating or replacing either the valve(s) and/or conduit until the pressure is retained in the system. The pressure indicators would also be tested for proper functioning. The entire tire inflation system would be tested for proper functioning, which would include a diagnostic program having warning lights to indicate problems, and a timing device to record the efficiency of the system.

7. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Chatelier et al as applied to claims 1-6 and 14-27 above, and further in view of Ingram ('949). Le Chatelier et al does not specify the structure of a hose connection (aka rotary union) connected to the third portion of the conduit.

Ingram teaches the use of a hose connection having a tee-fitting 84 with a male member 60, and a bulkhead fitting 52 having a counterbore 58 for receiving the male member 60. The counterbore 58 includes a base with a sealing ring 72 therein, which contacts a portion of the male member 60, thus reducing any air leakage through the hose connection. The hose connection further includes an air tube (86 & 88) having a

Art Unit: 3617

shoulder fitting 90. The tee-fitting 84 includes counterbores formed about an air channel, which receives the shoulder fitting 90.

While not shown, it is well known that the quick-release should fittings 90 would bottom out in the counterbores of the tee-fitting, thus allowing the shoulder fitting of the hoses to be easily and quickly released during maintenance, etc.

Therefore from these teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the tire inflation system of Le Chatelier et al with a rotary union hose connection, as a substitution of equivalent air delivery means, dependent upon cost, availability, and the environment in which the vehicle will be used.

Response to Arguments

8. Applicant's arguments filed 1 August 2006 have been fully considered but they are not persuasive. The Applicant argues that the rejection of claim 23 under 35 USC 112 for indefiniteness is improper, stating that the limitation of the control unit accepting direct input of a target air pressure setting is a proper functional limitation. However, the claim was not rejected for not having a proper functional limitation. The claims present multiple sources of input information, and therefore, claim 23 was rejected due to the fact that it is unclear where the direct input accepted by the control unit originates.

The Applicant argues that the claims are not anticipated by the Le Chatelier reference, since Le Chatelier discloses an inflate/deflate system, while the claims only disclose an inflation system. The Applicant further argues that since Le Chatelier

Art Unit: 3617

discloses an inflation/deflation system, it teaches away from an inflation system. The system disclosed in Le Chatelier allows inflation of a vehicle tire, and therefore meets the limitations of the claims, regardless of the fact that the Le Chatelier system has the additional feature of allowing deflation of the tire. In other words, since the Le Chatelier reference contains inflation structure, it meets the limitations of the claims and is a proper reference.

The Applicant further argues that Le Chatelier lacks a second valve that vents air to the atmosphere when in a closed position. The Applicant argues that the component 128 of Le Chatelier does not vent air when in a closed position. However, the rejection as set forth in the second paragraph of section 4 above, clearly explains how the Le Chatelier reference meets this limitation. The claims do not preclude the structure set forth by Le Chatelier.

The Applicant further argues that Le Chatelier does not disclose a step-up procedure. However, the fourth paragraph of section 4 clearly sets forth how Le Chatelier meets these claim limitations.

Conclusion

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 3617

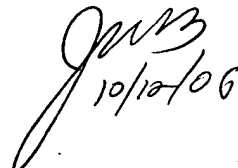
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason R Bellinger
Primary Examiner
Art Unit 3617



10/12/06